EPA Address @ Workshop

The Control Policy of Pollution of Coal Combustion & Its Developmental Tendency

Liu Zhi-Chuan Dept.of Science & Technology Standard, EPA

I am very pleased to attend the "US-China Low NOx Combustion & SOx Control Technology Workshop", which is organized by Dept. of High & New Tech. Development & Industrialization, MOST; Dept. of Science & Technology Standard (Dept. of STS), EPA; Office of Fossil Fuel Energy, DOE/USA. On behalf of Dept. of STS/EPA, warmly welcome all delegates attending; welcome 11US companies and 40+ Chinese companies attending. I would like to take this opportunity to express our appreciation to NPCC & NETL.

At this moment I would like to offer information regarding the Chinese Emission Control Policy on the coal firing and its development tendency.

A. Sever Environmental Status:

At present the Chinese environmental status is sever. The total amounts of pollutants emitted to atmosphere are still large. The polluted level still remains high. The environmental qualities in some areas are continuously worsened. In 2000 the total emitted amount of SOx reaches 19.950 M tons, which is much high than the acceptable capability by environment. Regional Acid Rain is sever; in 2002 61.8% of southern cities have a sever acid rain.

"The PRC Atmosphere Pollution Protection Decree", " The Essentials of National Economy & Society Development 10^{Th} FYP" and "National Environment Protection 10^{th} FYP" clearly require to strength protections of atmosphere pollution. In dual zone (acid rain control zone and SOx control zone) the year 2005's amount of SOx emission has to cut 10%～20% of the amount of the year 2000. These regulations require more challenges on environmental protections during 10^{th} FYP.

In year 2000 Chinese Utility has emitted 8.1Mtons/SOx, 3.2Mtons/dust, 4.96Mtons/NOx respectively. Per a forecast the installed capacity of fossil fuel power generation will reach 323 GW in year 2005 and 661 GW in year 2020. Based on the present emission levels the emission amount of SOx/dust/NOx will jump to 11.86/3.48/5.93 million tons in year 2005 and to 21.16/5.09/9.71 million tons in year 2020. As seen the atmosphere pollution by fossil fuel power generation becomes much severe.

B. Regulations for Controlling

B.1 Requests for Pollution Emitter (Power Plants & Industrial firms) According to " The PRC Pollution Protection Decree", China has executed a pollutant accumulation amount control plan; defined acid rain control zone and SOx control zone; determined exact control targets; and prepared " SOx Controlling Technologies and Its Policy".

It includes:

（1） The principle of coal firing SOx accumulation control policy:
conserving and properly utilizing energy; improving coal quality; applying a comprehensive control method combined with H-efficiency/low pollution combustion. According the cost and feasibility of control technologies, the regulations should be seriously executed to reduce the SOx emission.

（2） General technology pathway:
De-SOx devices should be installed for utility and large industrial boilers or combustion facilities if high-S coals are burned; medium/small industrial boilers may select to burn low-S coals or other clean fuels; Residential fuels should shift to electricity or NG to instead coal.

（3） Shut down all conventional coal power generation units (50 MW and below). Up to year 2010 gradually retire 100MW high pollution PC units (exclusive the units for comprehensive utilization).

（4） No approval for new coal mines (S>3%). Shut down small existing H-S coal mines (S>3%). For those H-S (>3%) large coalmines, its production should be restricted in near tern; Up to year 2005 if they still have no effective solution or no coal buyers who have installed De-SOx devises and satisfy the regulation, they should be shut down. The beneficiation facility should be installed for new coal (S>1.5%) mines except their buyers have De-SOx devises and satisfy regulation. For existing mines if S is greater than 2%, beneficiation devices have to be added.

（5）Propose the De-SOx and preventing secondary pollution technical pathway.

B.2 Requests to the construction & pollution control of municipal power plants

In Sept. 2003 EPA & State Development and Reformation Bureau jointly released a notice: “ A Notice Regarding to Strength Coal-fired Power Plant SOx Emission Control”. The notice requires:

（1）Within planned and existing zones of large and medium cities, in principle there is no permission to build or expand new coal fired power plants. After year 2003, there is no new approval for new co-generation plants except an urgent case, which needs a special approval process.

（2）Within center/east regions and the dual-control zones of west region, projects of new, retrofit and extending coal fired power plants must be approved through a tricky application procedure and the De-SOx facilities must be erected at same time. The power plant projects beyond dual-control zones have to equipped De-SOx devices during erection if the project do not satisfy the emission regulations or the local environment have no capacity to receive new emission.

B.3 Strength pollution management of existing power plants

For those coal fired plants located in cities which can not satisfy city planning and emission regulations, they should gradually meet the regulations by retrofit, retire or moving out. For those coals fired power plants approved for construction before 2000 and not satisfy the regulations, they should add De-SOx devices and gradually

meet the regulations. The projects of new, retrofit or expanding approved after year 2000 have to execute per new policy.

C. The " Fossil Fuel Power Plant Atmosphere Pollutant Emission Standards" will be effective soon.

C.1 There are three emission control phases to power plants erected in different years:

Before Dec. 3, 1996, executing the first phase standards;

From Nov.1,1997 to Jan. 1, 2004, executing the second phase standards;

From Jan.1,2004, executing third phase standards;

C.2 Different standards of each phase

Major controlling items:

SOx, NOx, dust, plant SOx emission rate, flue gas blackness

Standards for New power plants:

· Dust：50mg/m^3

· SO_x: 400mg/m^3 (for comprehensive resource utilization case—coal refuse burning power plants; low-S coal burning plants in west region; plants in region where environment has rooms to accept emission, the limits can properly increase a litter bit)

· NOx:（Controlling based on low NOx combustion technologies）

Coal-fired units：

If VMdaf<10%, 1100mg/m^3

10%≤V_{daf}≤20%, 650mg/m^3

V_{daf}≥20%, 450mg/m^3

Oil fired units:
200mg/m^3
GT units:
Oil fired 150mg/m^3
Gas 80mg/m^3

Flue gas blackness (opacity)：1.0

Plant SOx emission rate：Apply zoning control method.

There are 19 different regions nation-wade.

The cases also are considered: coal-fired power plants, non-dual control zone power plant in western region might be dealt leniently.

Urgent R&D and demo project

·fine particle control and monitoring technologies;

·low NOx combustion technologies

·Post combustion de-NOx technologies

·power plant Hg emission control technologies;

Better managing on the collection and spending of SOx pollution tax. The tax must goes to financial budget and should be managed as special funds. It can be only used for emission control of utility industry but not for other purposes. Further strength to monitor power plant pollution, and to effectively manage pollution protection. Strictly to enforce environment decrees and to strictly execute punishment and sanction for illegal actions.

**This draft is prepared by author's address at workshop and without author's review.